



Enabling Better Shore & Naval Expeditionary Readiness via Networked 3D Virtual Environments

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Navy Needs



- The ability to preview, plan, program and sustain shore readiness for complex and aging infrastructure and accelerated acquisition of new generation weapon platforms
- The ability to solve increasing multi-domain and expeditionary combat power and logistics support challenges tied to global shore infrastructure with less time and resources

Requires timely technical communications between people in disparate locations and from distinct commands

The Solution



Increase speed and agility of technical collaboration by utilizing the Extensible 3D open data standard to implement new web-enabled, model-based, real-time 3D communication capability across Naval enterprise networks.

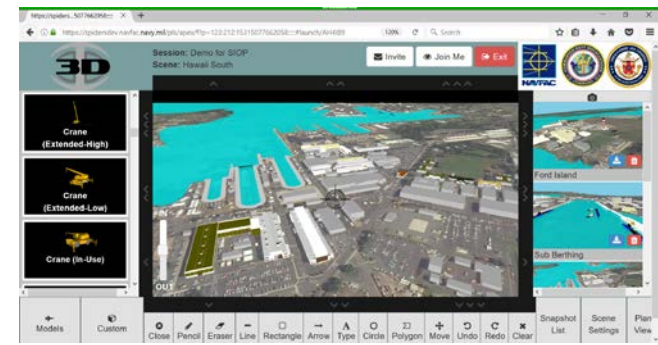
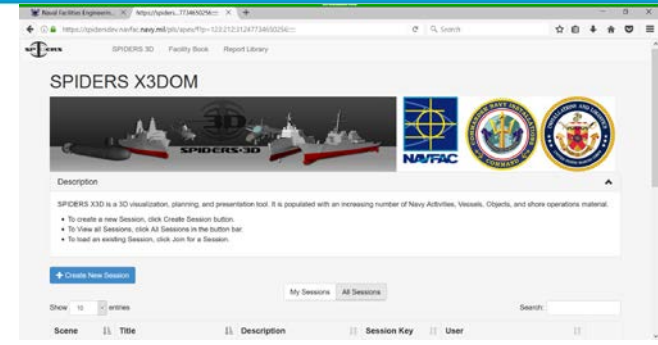
- Leverage existing enterprise IT architecture
- Reuse existing engineering, scientific and geospatial digital data investments
- Be affordable, tailorable and enterprise scalable
- Aligned with DoD digital engineering strategies

SPIDERS 3D Virtual Environments (3DVE)

Building Communication Bridges



- IT platform that bridges systems engineering, advance planning, and expeditionary exercises & operations
- Accelerates group learning and knowledge sharing; provides real-time group collaboration with SME's (operators, planners, engineers, decision makers)
- Adaptable, uses open standard medium to distill various 3D data sources into a common picture
- Affordable, sustainable 3D communication GOTS solution (web-based, no end-user software required)



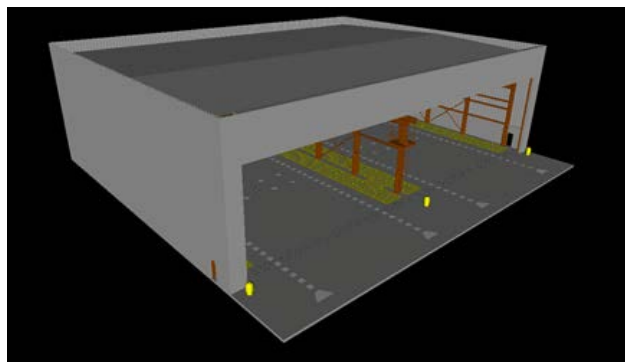
Integration of Disparate Digital Data



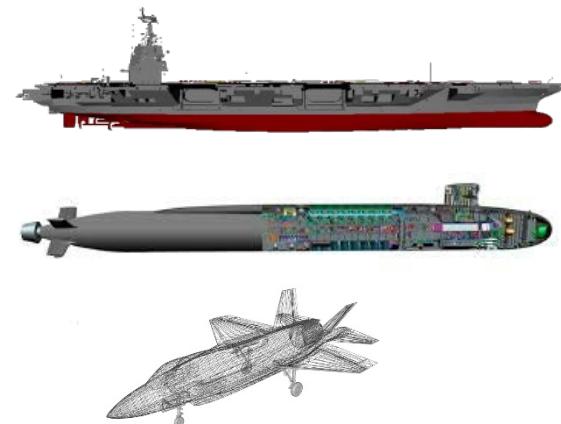
Unlock and integrate wide-ranging data formats into single open standard web-enabled 3D format for multiple uses and collaboration



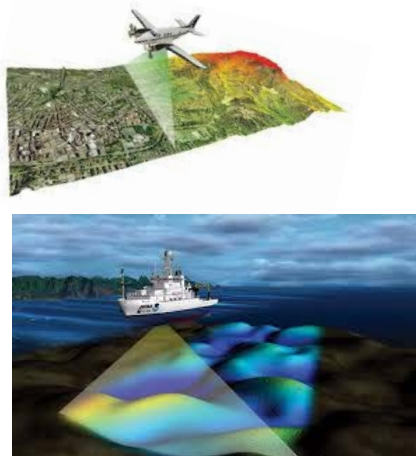
Satellite and Aerial Imagery



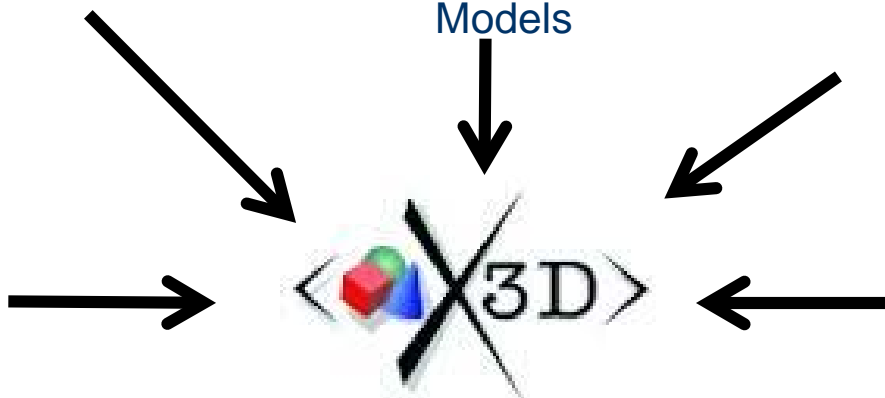
3D Facility & Infrastructure Models



3D Product Models

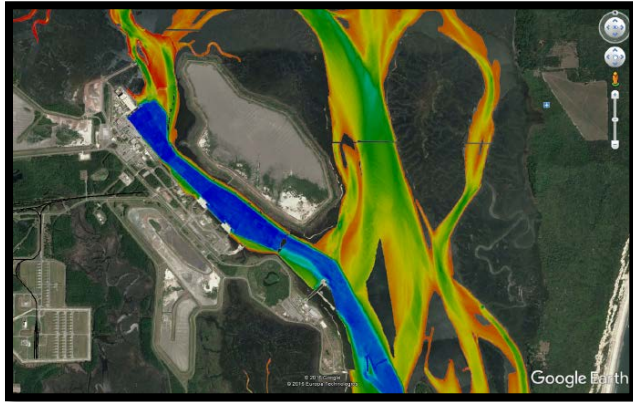


Topographic and Bathymetric Scans

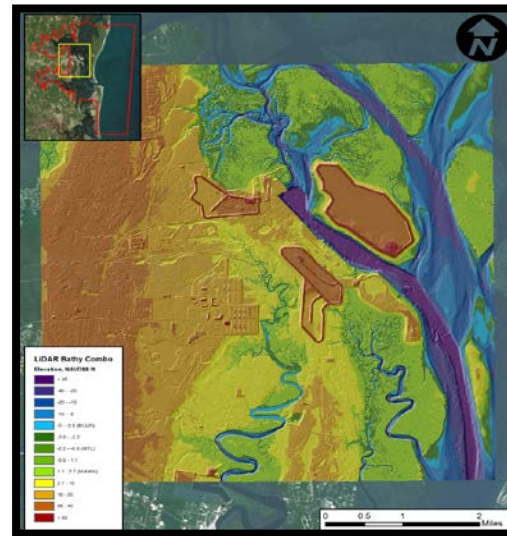


Hand-held Laser Scans

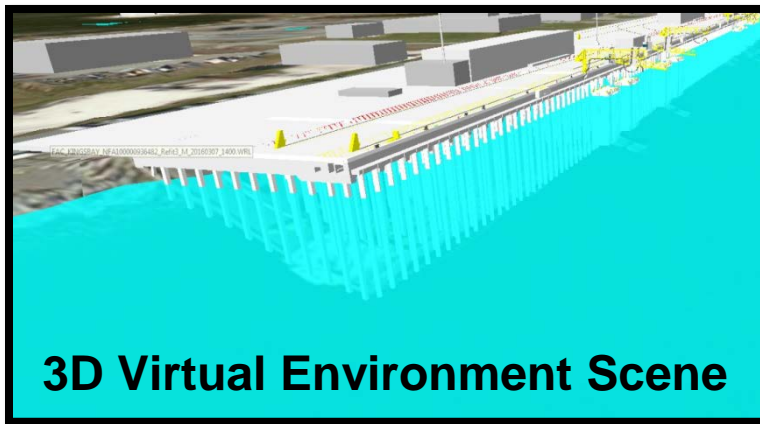
Geospatial Data Integration



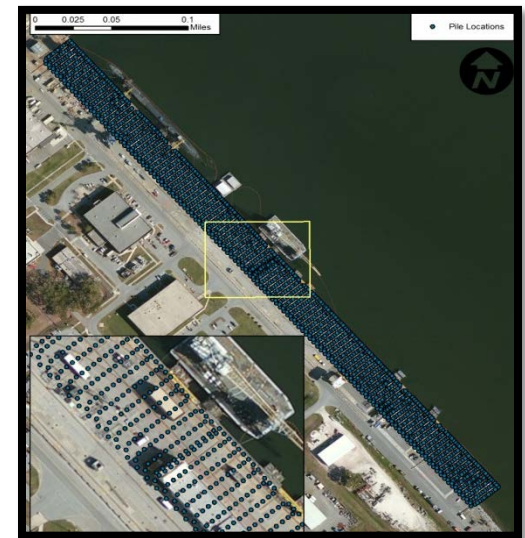
Remote Sensing Data



GIS DEM

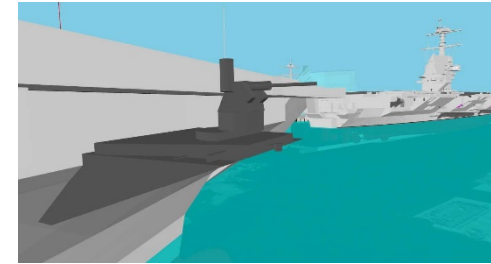
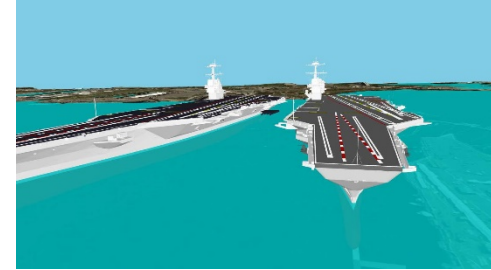
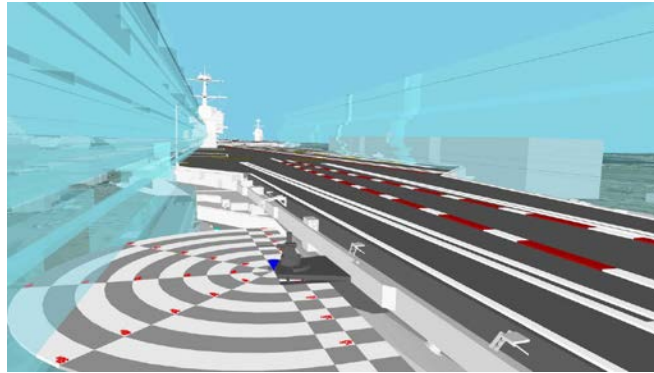
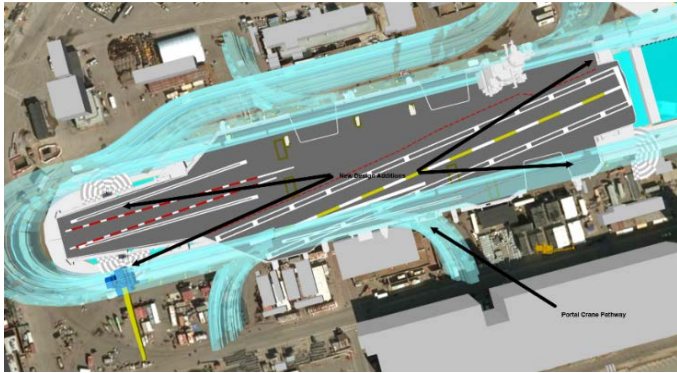


3D Virtual Environment Scene

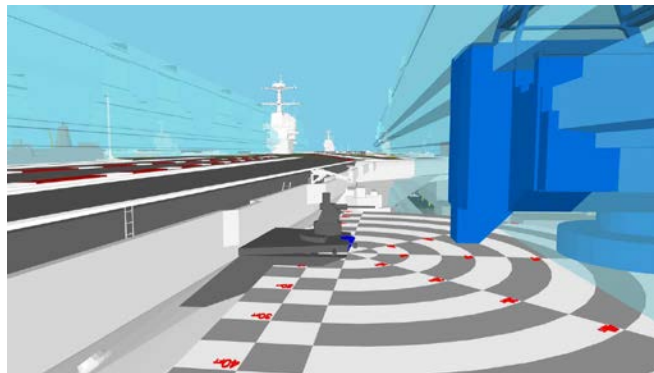
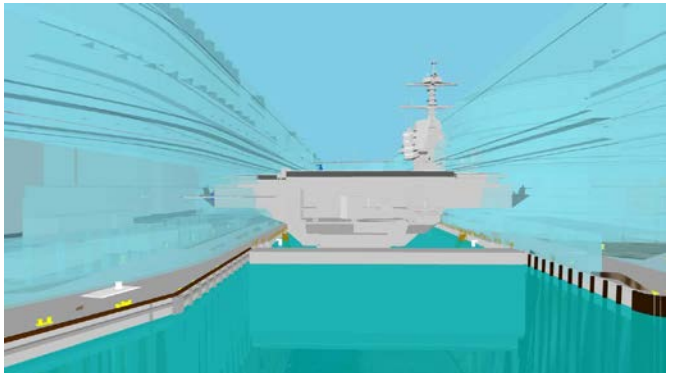


Structure Vector Data

Enabling Shore Readiness via Improved Systems Engineering Collaboration



The X3D data standard enabled effective integration of authoritatively derived system models of different file formats into an accurate geo-enabled 3DVE to provide an interactive common picture for group collaboration and understanding.



The 3DVE was used in a teleconference setting with dozens of dispersed stakeholders networked via a NAVFAC webpage following a broadcasted 3D storyboard and with ability to examine 3D viewpoints individually. The 3DVE enabled collective understanding of systems engineering design risk, and facilitated group consensus for accelerate decision making – saving time & avoiding costs.

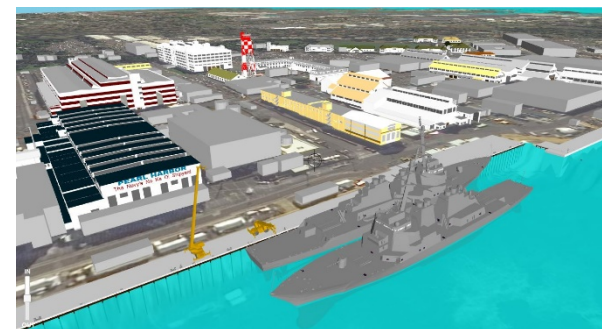
Concept for Expeditionary Readiness Visualizing Bases to Places



Rapid 3D data collection from different sources, converted into a 3D scene

A collage of images illustrating the data collection process. At the top left is a white drone with a camera. To its right is a person wearing a blue and orange helmet with a sensor. Below these are two 2D maps: one showing a topographic view with colored overlays and another showing a street-level view. Red arrows point from the maps to a 3D model of a building with a green wireframe overlay. The 3D model is shown on a grid floor.

Review alternatives real-time across networks to speed consensus



Utilize 3DVE to develop operational courses of action



Web-Based 3DVE Value



- Improved technical communications
 - Collaborate real-time and present multi-system operations and site data in an accurate geo-enabled 3DVE
 - Discover and explain spatial issues faster in 3D versus 2D
- Efficiently communicate accurate and scaled site characteristics and decision support data to large dispersed groups and leadership
- Effectively support rapid and iterative system design reviews and advance planning assessments
 - Networked creativity, agility, acceleration
 - Review concepts, risk, shared knowledge, decisions

Enables decision-makers to quickly optimize tactics, techniques, and procedures